BioNanoScience 2017 vol.7 N2, pages 302-305

Liver Cells Proliferation and Apoptosis in Patients with Alcoholic Liver Disease After Autologous Hematopoietic Stem Cell Transplantation

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Abstract

© 2016, Springer Science+Business Media New York.Alcoholic liver disease is a huge medical and social problem that leads to liver fibrosis, cirrhosis, and hepatocellular carcinoma. Unfortunately, the last stages of the disease do not have efficient treatment, except liver transplantation, and require development of new therapeutical approaches. Transplantation of stem cells might be the most promising approach. In our research, we studied transplantation of autologous hematopoietic stem cells (HSC) into the celiac trunk of patients with alcoholic liver cirrhosis. In this article, we pay particular attention to proliferation and apoptosis—two fundamental processes, which determine the fate of regeneration. Liver biopsy specimens before treatment, 3 and 12 months after transplantation of HSC, were stained immunohistochemically with antibodies against PCNA and Bcl-2. The results showed that treatment was safe and effective, hepatocytes increased proliferation, and inflammatory cells decreased antiapoptotic activity, signifying improvement in liver regeneration. However, effect of treatment after 12 months decreases and requires repeated HSC transplantation.

http://dx.doi.org/10.1007/s12668-016-0354-2

Keywords

Alcoholic liver disease, Hematopoietic stem cells, Liver cirrhosis, Liver fibrosis, Regeneration, Transplantation

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